Job No.: CQCE/BBMP/LR/W.No.14/2017-18 Date: 06.12.2017

TEST REPORT

CLIENT	:	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
AGENCY	:	**Sri. L. Raghunandan,** Contractor, Bangalore.
NAME OF THE WORK	:	Improvements to roads and drains at 18th cross Bagalagunte in Ward No. 14, BBMP, Bangalore.
REFERENCE	:	EE/DD/WO/ /2017-18 Dated
SAMPLE ID	:	Cement
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-1989
1	a) Initial Setting Time	IS-4031 (Part -5)	150 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	420 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	30.00 %	-

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Job No.: CQCE/BBMP/LR/W.No.14/2017-18 18.12.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.

Agency : **Sri. L. Raghunandan,** Contractor, Bangalore.

Name of the work : Improvements to roads and drains at 18th cross Bagalagunte in Ward No. 14, BBMP, Bangalore.

Reference : EE/DD/WO/ /2017-18 Dated

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	11.12.2017	18.12.2017	8.164	374.5	16.64
2	11.12.2017	18.12.2017	8.172	358.2	15.92
3	11.12.2017	18.12.2017	8.186	347.6	15.45

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Job No.: CQCE/BBMP/LR/W.No.14/2017-18 18.12.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.

Agency : **Sri. L. Raghunandan,** Contractor, Bangalore.

Name of the work : Improvements to roads and drains at 18th cross Bagalagunte in Ward No. 14, BBMP, Bangalore.

Reference : EE/DD/WO/ /2017-18 Dated

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	11.12.2017	18.12.2017	8.169	361.2	16.05
2	11.12.2017	18.12.2017	8.173	387.4	17.22
3	11.12.2017	18.12.2017	8.191	392.8	17.46

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Job No.: CQCE/BBMP/LR/W.No.14/2017-18 19.12.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.

Agency : **Sri. L. Raghunandan,** Contractor, Bangalore.

Name of the work : Improvements to roads and drains at 18th cross Bagalagunte in Ward No. 14, BBMP, Bangalore.

Reference : EE/DD/WO/ /2017-18 Dated

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	12.12.2017	19.12.2017	8.161	328.6	14.60
2	12.12.2017	19.12.2017	8.176	358.7	15.94
3	12.12.2017	19.12.2017	8.198	379.6	16.87

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Job No.: CQCE/BBMP/LR/W.No.14/2017-18 Date: 15.12.2017

PRECAST SLAB 100mm Thick(CORE) TEST REPORT

Client	:	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Contractor	:	**Sri. L. Raghunandan,** Contractor, Bangalore.
Name of Work	:	Improvements to roads and drains at 18th cross Bagalagunte in Ward No. 14, BBMP, Bangalore.
Reference	:	EE/DD/WO/ /2017-18 Dated
No.of Sample Tested	:	03
Date of Testing	:	15.12.2017
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	80.00	0.368	2342.76	1.60	0.960	32.80	16.70	18.04	17.32	21.65
2	50.00	83.00	0.386	2368.53	1.66	0.960	34.60	17.62	19.03	18.27	22.84
3	50.00	85.00	0.403	2414.66	1.70	0.960	35.70	18.18	19.64	18.85	23.56

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3. Any Query regarding the report must be reported reported within 15days from the date of testing.

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Job No.: CQCE/BBMP/LR/W.No.14/2017-18

Date : 16.12.2017

ATTERBERG LIMITS TEST FOR GSB (COARSE GRADED)
IS : 2720 (Part - 5)

Client : **Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency : **Sri. L. Raghunandan,** Contractor, Bangalore.
Name of work : Improvements to roads and drains at 18th cross Bagalagunte in Ward No. 14, BBMP, Bangalore.
Reference : EE/DD/WO/ /2017-18 Dated
Date of Testing : 16.12.2017

As per MORTH Table : 400-01

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	23.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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3. Any Query regarding the report must be reported within 30 days from the date of testing.

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Job No.: CQCE/BBMP/LR/W.No.14/2017-18 22.12.2017

Aggregate Gradation Test
IS : 2386 Part I

Client	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	**Sri. L. Raghunandan,** Contractor, Bangalore.
Name of the work	Improvements to roads and drains at 18th cross Bagalagunte in Ward No. 14, BBMP, Bangalore.
Reference	EE/DD/WO/ /2017-18 Dated
Sample ID	Hotmix Plant, Bangalore.
Type of Mix	Bituminous Macadam
Date of Testing	22.12.2017

5250 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH specification
19	354	6.74	6.74	93.26	90-100	
13.2	1863	35.49	42.23	57.77	56-88	
4.75	1625	30.95	73.18	26.82	16-36	
2.36	945	18.00	91.18	8.82	4-19	
0.3	120	2.29	93.47	6.53	2-10	
0.075	36	0.69	94.15	5.85	0-8	

Total Weight of Sample: **5050** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH specification
19	389	7.70	7.70	92.30	90-100	
13.2	1425	28.22	35.92	64.08	56-88	
4.75	1863	36.89	72.81	27.19	16-36	
2.36	652	12.91	85.72	14.28	4-19	
0.3	410	8.12	93.84	6.16	2-10	
0.075	85	1.68	95.52	4.48	0-8	

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Job No.: CQCE/BBMP/LR/W.No.14/2017-18 22.12.2017

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	**Sri. L. Raghunandan,** Contractor, Bangalore.
Name of the Work	Improvements to roads and drains at 18th cross Bagalagunte in Ward No. 14, BBMP, Bangalore.
Reference	EE/DD/WO/ /2017-18 Dated
Source / Location	Hotmix Plant, Bangalore.
Type of Mix	Bituminous Macadam
Date of Testing	22.12.2017

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2020	2022	2024	
2	Weight of basket suspended in water	W_2 g	754	754	754	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1266	1268	1270	
4	Weight of saturated surface dry aggregate in air	W_3 g	2014	2016	2018	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	748	748	748	
6	Weight of oven dried aggregate	W_4 g	2009	2010	2011	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.686	2.687	2.689	2.687
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.704	2.709	2.714	2.709
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.25%	0.30%	0.35%	0.30%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Macadam is 2.0%

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